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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,704	02/04/2002	Steve W. Tuszynski	6550/53675	7178

30505 7590 11/18/2004

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EXAMINER	
PALADINI, ALBERT WILLIAM	
ART UNIT	**PAPER NUMBER**
2125	6

DATE MAILED: 11/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/067,704	TUSZYNSKI, STEVE W.	
	Examiner	Art Unit	
	Albert W Paladini	2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 February 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-92* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-92* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 50-54, 59, 91, and 92 are rejected under 35 U.S.C. 102(e) as being anticipated by Tanaka (6616759).

In figure 7, Tanaka discloses a method for generating a model for facilitating a design and manufacturing process using a regression model, and in figure 6 Tanaka discloses the regression graph for two articles characteristics using a predictor for the abscissa and a predicted value for the ordinate.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2-49, 55-58, and 60-90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka (6616759) in view of Dunn (6326160).

In figure 7, Tanaka discloses a method for generating a model for facilitating a design and manufacturing process using a regression model, and in figure 6 Tanaka discloses the regression graph for two articles characteristics using a predictor for the abscissa and a predicted value for the ordinate. Tanaka does not disclose the use of determining the intersection of the intersection between the predictor value and the remaining characteristic as recited in claims 2, 55, and 60; because Tanaka does not assume any error on the independent variable x shown as the abscissa in figure 6.

Dunn utilizes regression techniques to predict physiological target values. Dunn states on lines 35-52 in column 7 "A plot of the glucose levels predicted by the Mixtures of Experts algorithm (based on the data described above) versus the actual blood glucose levels is presented in FIG. 7 (a Correlation Plot). Also shown in FIG. 7 is the orthogonal least squares line (A. Madansky, The Fitting of Straight Lines When both Variables are Subject to Error, J. American Statistical Association 54:173-206, 1959; D. York, Least-Squares Fitting of a Straight Line, Canadian Journal of Physics 44:1079-1986, 1966; W. A. Fuller, Measurement Error Models, Wiley, New York, 1987; and W. H. Press, S. A. Teukolsky, W. T. Vetterling and B. P. Flannery, Numerical Recipes in C. Cambridge University Press, Cambridge, 1992) with an error variance ratio (defined as the error in the dependent variable divided by the error of the independent variable) of 2.05. This variance error ratio corrects the linear regression line (which assumes zero error in the independent variable) for the true error in both independent and dependent variables." Dunn discloses a regression model, which takes into account noise or variance on both the predictor (independent variable) and the predicted value dependent variable.

It would have been obvious to one of ordinary skill in the art that if both the independent and dependent variable have noise or variance, that one would use the target value of the independent variable to predict the target value of the dependent variable. This would incur the finding the intersection of the two target values, and considering the range of each value in the regression.

Relevant Prior Art

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Koza (5136686) utilizes multiple regression analysis in a genetic algorithm involving many dependent variables and teaches that that the fitness function for multiple regression problems must be modified to take into account the fact that more than one dependent variable is involved. One way to do this is to make the fitness equal to the absolute value of the difference between the value of the first dependent variable returned by the S-expression and the target value of the first dependent variable plus the absolute value of the difference between the value of the second dependent variable returned by the S-expression and the target value of the second dependent variable. Of course, other ways of measuring differences (such as the square root of the sum of the squares of differences) can also be used in the multiple regression problem (in the same way as when there is only one dependent variable).

Cusumano (6567752) discloses a method and system for modeling the state of deterioration of a system, which have subsystems with various damage acceleration mechanisms taking into account process model noise, and measurement noise, which are assumed to be white, independent variables with Gaussian distributions.

Heching (6760632) discloses a computer method for business process modeling and optimization, where on example is a constrained linear regression where the constraint is on the dependent variable. In this case, the functional form is: y=b1x1+b2x2+e, where y represents the dependent variable (say sales), x1 is an independent variables (say price), x2 is another independent variable (say promotion), b1 and b2 are model coefficients (to be determined), and e is a residual noise (to be minimized via adjustments of b1 and b2). Historical data provide a set of y values and a numerical "design" matrix X, consisting of two columns (for x1 and x2). To perform the regression using the given set of observations y and the "design"

matrix X, one preferably minimizes the square error (y-Xb,y-Xb) where b is a vector of b1 and b2. The regression preferably searches for optimal values of b, which minimize the squared error. In addition, there are constraints on y, for example, y>0 (if y represents sales than y>0 insures no negative sales). One may also have constraints on x, for example x1>0 (if x1 represents price than x1>0 insures no negative prices). The constraints on x1 are typical for linear programming problems. Only replacing them with their functional estimates Xb can include the constraints on y. The problem, then, can be solved via linear programming routines, yielding optimized values of b1 and b2.

6. Any inquiry concerning this communication or earlier communication from the examiner should be direct to Albert W. Paladini whose telephone number is (572) 272-3748. The examiner can normally be reached from 7:30 to 3:30 PM on Monday, Tuesday, Thursday, and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Leo P. Picard, can be reached on (572) 272-3749. The official fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

November 15, 2004

Albert W. Paladini
Primary Examiner
Art Unit 2125